Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1-15. (Cancelled)

16. (Currently Amended) A tuner adapted to equalize non-linear frequency changes within a desired frequency range in response to tuner displacements relative to a resonator body, said tuner comprising:

a tuner element having a non-uniform distribution of the effective dielectric permittivity along an axis of tuner displacement, said non-uniform distribution of the effective dielectric permittivity is realised by subdividing the tuner element into a number of ~~sections~~ cross-sectional portions, each of which is distinguishable by their geometrical shape or size in the dimension perpendicular to said axis of tuner displacement or by a value or distribution of the dielectric coefficient ε_r along said axis.

17. (Cancelled).

18. (Currently Amended) The tuner according to claim 16, wherein [the] an effective tuning area is within a hollowness of the resonator.

19. (Currently Amended) The tuner according to claim 16, wherein [the] an effective tuning area is outside of the resonator.

20. (Currently Amended) The tuner according to claim 18, wherein the ~~tuner~~ cross-sectional portions includes two cylindrical sections comprising a ratio d_1/d_2 of section diameters within a range from 1.1 to 1.6 and a corresponding ratio l_1/l_2 of section lengths within a range from 0.2 to 0.4.

21. (Currently Amended) The tuner according to claim 18, wherein the ~~tuner~~ cross-sectional portions includes two sections having a constant diameter having a ratio $\varepsilon_{r1}/\varepsilon_{r2}$ for the values of the dielectric coefficients of the sections within a range from 2.5 to 3.5 and a corresponding ratio l_1/l_2 for the section lengths within a range from 0.2 to 0.4.

22. (Currently Amended) The tuner according to claim 19, wherein the ~~tuner~~ cross-sectional portions includes two sections comprising a ratio d_1/d_2 for the section diameters within a range from 1.1 to 2 and a corresponding ratio l_1/l_2 for the section lengths within a range from 1.2 to 2.8.

23. (Currently Amended) The tuner according to claim 19, wherein the ~~tuner~~ cross-sectional portions includes two sections having a constant diameter comprising a ratio $\varepsilon_{r1}/\varepsilon_{r2}$ for the values of the dielectric coefficients of the sections within a range from 1.2 to 4 and a corresponding ratio l_1/l_2 for the section lengths within a range from 1.2 to 2.8.

24. (Previously Presented) The tuner according to claim 16, wherein the tuner is equipped with a hollowness for fastening of an axis.

25. (Previously Presented) The tuner according to claim 24, wherein the axis of tuner displacement is arranged centrally through the resonator hollowness.

26. (Currently Amended) A tuner adapted to equalize non-linear frequency changes within a desired frequency range in response to tuner displacements relative to a resonator body, wherein the resonator comprises a non-uniform distribution of the effective dielectric permittivity along the axis of tuner displacement, wherein the non-uniform distribution of the effective dielectric permittivity is realised by subdividing the resonator into a number of cross-sectional portions along said axis of tuner

displacement, each of which is distinguishable by at least their geometrical shape or size or the value and distribution of the dielectric coefficient ε_r along said axis.

27. (Cancelled).

28. (Currently Amended) The tuner according to claim 26, wherein the ~~resonator consists of~~ cross-sectional portions perpendicular to said axis of tuner displacement comprise two sections having a constant dielectric coefficient comprising a ratio d_1/d_2 of the diameters of the hollowness in each section within a range from 1.1 to 2.0 and a corresponding ratio l_1/l_2 of the section lengths within a range from 1.5 to 4.5.

29. (Currently Amended) The tuner according to claim 26, wherein the ~~resonator consists of~~ cross-sectional portions perpendicular to said axis of tuner displacement comprise two sections having a constant diameter, a ratio $\varepsilon_{r1}/\varepsilon_{r2}$ for the values of the dielectric coefficients of the sections within a range from 1.4 to 4 and a corresponding ratio l_1/l_2 for the section lengths within a range from 1.5 to 4.5.

* * *